

In the Specification:

Replace the paragraph beginning on p. 2 line 13 with the following amended paragraphs

-- The present invention is intended to create a new type of method in a production process, by means of which the process can be monitored more easily and accurately than previously. ~~The characteristic features of the invention are stated in the accompanying Claims.~~

Accordingly, a method for monitoring and analyzing a process, in which method a large number of variables are measured from the process, with the aid of these variables, a fingerprint according to a good process situation, relative to runnability, is defined and then stored in a memory, the stored fingerprints are compared with fingerprints obtained in a normal process situation, on the basis of the comparison, the difference, displayed graphically to the user, between the recorded good situation and the momentary process situation is defined, is characterized in that the definition according to a good process situation is made separately in several sub-processes and at least one specific index in the selected sub-process is defined relative to runnability, according to a poor process situation, in order to detect a machine-specific critical situation.

In a paper machine, the said specific index relates to one of the following:

- the mass-mixing in the short circulation
- the condition of the felts in the press section
- the electrochemical state of the wet-end.

The fingerprint according to a poor process situation is substantially narrower in its area than the fingerprints according to a good process situation. The fingerprint according to a poor process situation is calculated from at the most six, preferably from 3 - 6 variables. The method, using a neural network, may be characterized in that the fingerprint according to a good process situation is calculated in the teaching stage from at least ten, preferably from 10 - 20 variables. The method using a neural

network may be characterized in that the system is used under remote control.

The point of departure of the invention is to seek the causes of problems as quickly as possible. From the point of view of the invention it was important that the differences detected were due to quite specific problems. Such specific problems appear, for instance, in a paper machine in the following contexts:

- mass mixing in the short circulation
- condition of felts in the press section
- water equilibrium in the felts
- electrochemical state in the wet end
- total retention
- drying process
- process state during change of grade
- 'runnability quality' monitoring - breaks, holes, and spots.

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P. 9 line 23 insert the following paragraph

-- Although the invention has been described by reference to specific embodiments, it should be understood that numerous changes may be made within the spirit and scope of the inventive concepts described. Accordingly, it is intended that the invention not be limited to the described embodiments, but that it have the full scope defined by the language of the following claims. --;